THE PHARMACOLOGIST

SPRING 1959

AMERICAN SOCIETY FOR PHARMACOLOGY AND
EXPERIMENTAL THERAPEUTICS

BEAUMONT HOUSE WASHINGTON, D.C.

THE PHARMACOLOGIST, it is hoped, will appear twice yearly: a Spring issue to contain notes on meetings, on proceedings of the Council of the Society, and on matters of interest to members of the Society, together with news items about pharmacology; a Fall issue to contain some similar items, but chiefly the abstracts for the Fall scientific sessions of the Society.

Items of interest for The Pharmacologist are to be sent to the Secretary of the Society.

The Pharmacologist should go to members of the American Society for Pharmacology and Experimental Therapeutics about two weeks before each respective Spring and Fall meeting of the Society. Non-members may purchase copies at $1.00 per issue.

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A publication primarily for members of the American Society for Pharmacology and Experimental Therapeutics, Inc., which was founded December 28, 1908, and incorporated June 19, 1933

It has not been easy to get this venture off the ground. Response to its proposal in the summer of 1958 was less than enthusiastic. There was resulting inhibition in getting it organized. When it dawned that it was being taken for granted it became tough to put it together for the spring meetings. Thanks to Milton Lee and the staff at Beaumont House there has been sufficient cheery help to get it rolling. Apologies are offered for the roughness of this initial issue.

The function of The Pharmacologist is to give helpful non-technical information to people who are interested in pharmacology & toxicology. This is part of current efforts to meet growing needs for better communication between scientists as their numbers increase, and as opportunities for personal contacts tend to decrease in the busy rush of scientific affairs.

Lists of officers, committees, delegates to other organizations, editorial boards, and lists of past officers, as well as the constitution and by-laws, may be found annually in Federation Proceedings, published by the Federation of American Societies for Experimental Biology. These Proceedings are sent to members of the American Society for Pharmacology & Experimental Therapeutics as part of the services maintained by our annual dues. Be sure to keep paid up!

There are now some 800 members in our Society, 10% of whom were elected in April, 1958. There are some 70 applications for membership to come before the Society in April, 1959. Should we elect members at both spring & fall meetings?

COMING MEETINGS:

Federation of American Societies for Experimental Biology:
1959-- April 13-17, Atlantic City
1960-- April 10-15, Chicago
1961-- April Atlantic City

Fall meetings for American Society for Pharmacology & Experimental Therapeutics, Inc.
1959-- August 31-September 3, Miami
1960-- Seattle
1961-- Rochester
1962-- Nashville

XXI International Congress for the Physiological Sciences:
1959-- August 9-15, Buenos Aires

Pharmacological Society of Canada:
1959-- June 8-10, Toronto
1960-- June 8-10, Winnipeg

Japanese Pharmacological Society:
1959-- March 31-April 2, Tokyo

Western Pharmacology Society:
1960-- January 21-23, San Francisco

Officers, Pharmacological Society of Canada:

President: Kenneth Ferguson, Connaught Laboratories, Toronto
Secretary: M. G. Allmark, Tunney's Pasture, Ottawa

AT THE FALL MEETING

A feature of the Fall Meeting of our Society, August 25-28, 1958, under the cordial hospitality of the University of Michigan, Ann Arbor, was to have been the dinner address by J. H. Burn, for long and distinguished as the Professor of Pharmacology at Oxford University, England. Unfortunately Professor Burn became ill at the last moment and could not come to our meeting. However, he sent a copy of his talk, and it is published herewith, with our thanks to him for preparing it, and with our ever best wishes for his continued joy in his good work.

Whither Pharmacology?

by J. H. Burn

I had the great privilege of addressing this Society on an occasion like this in 1952, and I did not expect that I would be asked to speak again. I retire from the Oxford chair next year and it is therefore clear that I am no longer to be regarded as a forward-looking man. What I will say therefore, the younger members of the audience may with some reason regard as old-fashioned and out of date, but it is to them that I would like to speak first.

It concerns what I think should be the attitude of the research worker whatever his field of study, whether it is pharmacology or not. He should be constantly seeking to increase the number of technical methods with which he is familiar.

I first went to work with Dale in January 1914, and in the ten months before I went into the army I remember that I learnt to estimate the oxytocic activity of posterior pituitary extract, I learnt to prepare a spinal cat to

test for ergotoxine in ergot extract, and I learnt to estimate the sugar in a rabbit's blood. When I went back to work with Dale in 1920, I learnt to perfuse a rabbit's heart, I learnt to cut sciatic nerves and to remove sympathetic ganglia in survival operations, I learnt to record the leg volume of a cat in a plethysmograph, I learnt to give intravenous injections to mice, I learnt to count trypanosomes in blood, I learnt to measure the output of carbon-dioxide by an isolated heart, I learnt to measure the oxygen uptake of a spinal cat, I learnt to remove the thyroid gland from a rabbit, I learnt to perfuse the hindleg of a cat or dog, and perhaps of all these the only difficult one, I learnt to perfuse a dog's liver.

I learnt these things in the course of the five years from 1920 to 1925 when I was with Dale, and it was in terms of the things I had learnt that I measured my progress. For already by 1925 it was clear to me that a man's outlook in research depended on the number of technical methods he knew. I think that about that time I made a kind of resolution to go on increasing my knowledge of methods in order to have new ways of thinking about and of attacking any problem. You see, if you have no method of studying an organ, you will not bring that organ into your thoughts. You will limit your thinking and confine it to the methods you know. Moreover if you keep on using the same methods, and do not learn new ones, you stagnate.

The great reason for a young man to visit different laboratories, especially to visit laboratories in different countries, is in order to learn new methods. Sometimes a man has come to us wanting to continue some line of investigation which is already advancing nicely. I have always discouraged him and told him he would do better in our laboratory to learn the methods we use and

attempt a problem along our lines. He can keep his own line until he goes back home. This advice is often disliked, but I believe it to be good. So I would say first of all that a young man does well to develop a burning desire to be forever learning new methods.

Now when I am talking about methods I would like to add that I think pharmacologists should not only learn new methods but should be interested in methods which require skill. When I first learnt to prepare a spinal cat, which as you know involves exposing the spinal cord by chipping away the second cervical vertebra, Dale showed me how to do the operation without losing more blood than would be the size of a dime on a piece of cotton. Now it is not important to do the operation as carefully as that, but Dale took great pride in doing it as well as possible, avoiding all blood loss. That is to say he regarded his experimental work as something to be done with artistry and elegance. He was proud of his craftsmanship.

There is today a certain tendency to get away from methods requiring dexterity and to fly to methods involving the use of complicated apparatus where the machine does all the work. I think this will result in pharmacology having no scientific methods which are peculiarly its own, so that as handicraft it will become indistinguishable from biochemistry.

There is another reason for being eager to learn new technical methods which is perhaps worth mentioning. Many subjects sound difficult, and we are often amazed at those who are able to discuss them competently. But almost all subjects become easy to understand when once we begin to work at them. I am not suggesting

that in fields like electropharmacology practical advances are easy to make, but the problems at least become clear and defined when we try. We can at least discuss them intelligently.

Now let me come to more contentious matter. What are the problems which pharmacologists should study? What are the methods they ought to know? If we meet an organic chemist, we are clear what we can ask him to do. He has received a standard training, which is I imagine similar in many respects in Britain, in the United States, in France and in other countries. But what if we meet a pharmacologist? What would we expect him to be able to do? I imagine that there is nothing standard about his training, and that if all heads of departments here were to write down what they think, the accounts would all be very different. So all I can do is to tell you what my answer would be. Before I give it I will ask another question, though it is on the same point. If you were taken blindfold into a laboratory and then when the blindfold was removed you were asked "Is this a pharmacological laboratory?" how would you decide?

Well I would look around for isolated organ baths, and if I did not see one I would say it was not a pharmacological laboratory. To me an isolated organ bath is as essential a piece of the pharmacologist's equipment as a microscope for a bacteriologist. So that I expect a pharmacologist to be reasonably expert with an isolated organ bath. He ought to be able to estimate an unknown solution of acetylcholine, or of histamine, or of norepinephrine or of serotonin within 10 per cent, and he ought to be able to measure amounts of these substances as small as a few nanogrammes. He must be expert

with the frog rectus and the frog heart for acetylcholine, the rat blood pressure for norepinephrine, the rat uterus for epinephrine, the guinea-pig ileum for histamine and the rat stomach for serotonin. Most of these methods are methods which require an isolated organ bath. The first reason for the presence of many isolated organ baths then is for the pharmacologist to carry out those estimations for which by training he should be expert, namely the estimation of small amounts of biologically active substances by biological methods. I suggest that every young pharmacologist working for his Ph.D. ought to spend six months working with the isolated organ bath and with the method of superfusion introduced by Finkleman and recently revived and greatly improved by Gaddum. If a pharmacologist cannot estimate epinephrine and serotonin in millimicrogrammes or nanogrammes he really cannot claim that he is properly trained.

The isolated organ bath offers a much wider scope than as a means of estimation, for it is being extended to the study of isolated organs which are innervated. My colleague, Dr. Edith Bülbring, introduced the phrenic-nerve diaphragm preparation of the rat, and in Europe a great deal of work has already been done with it. Recently a young man, L. M. McEwen, has shown how to make the vagus nerves work for hours on end when they are removed with the heart from the body. He also found that a preparation of isolated atria with vagus nerves could be set up. That worked for 48 hours. Similarly strips of isolated intestine with their extrinsic nerves have been prepared, and these all seem to me to offer great scope for pharmacological investigation. Very little attention is paid to such preparations by physiologists, so that in addition to studying the effects of

drugs quantitatively, the pharmacologist can make important discoveries about the basic physiology.

If I now turn to a quite different matter, I would say that one of the disturbing features of pharmacology at the present time is the number of new journals which are appearing. In 1945 there was one Journal of Pharmacology and Experimental Therapeutics which was managed jointly by this Society and by the British Pharmacological Society. Then in 1946 we started the British Journal of Pharmacology. I may say I was opposed to that, because I did not see why the one journal should not continue to publish our papers as well as yours. I think I was wrong, for although our journal is much smaller than yours, the number of papers from British laboratories has increased greatly since 1945, and your journal might not have been able to accommodate them. At the time my opposition was based on the fear that the work of editing the new journal would distract someone from his research, and in fact from 1946 to 1952, a period of seven years, my own colleague, Dr. Ing, was actually occupied for much of his time as chief editor.

The situation that there were two journals (for English speaking pharmacologists) was one to which we have become accustomed. But now the position has become much worse because we have a Journal of Neurochemistry, we have another which is called Biochemical Pharmacology, and then there is a journal dealing with psychopharmacology, or with brain pharmacology, and lastly there is one which I think is to be called Medicinal Chemistry.

The appearance of so many different journals is I think very bad for Pharmacology, because it

has the effect of a centrifuge splitting us off from one another. It is, I am sure, the aim of each one of us, as he grows older, to look at the subject more and more widely and from more and more points of view. The subject is bound to expand, but we want to expand with it. Some of us for example employ in our work biochemical techniques rather than those of pharmacodynamics. But those who employ biochemical techniques, like my colleague Dr. Blaschko for example, must keep in touch with the rest of us and we with them if our wisdom is to grow wider and if the subject as a whole is to advance. I think the emergence of so many new journals makes this close contact extremely difficult to maintain. It promotes the formation splinter groups, and the members of a group tend to talk only to one another. They arrange symposia to which they invite one another, and cut themselves off from their fellow pharmacologists.

These new journals spring up largely I think because of the commercial activities of publishers. For example the journal Biochemical Pharmacology which has appeared at the moment of writing this address could not have begun unless the Pergamon Press had been willing to finance it. We do not know their aims, but I do not think it unfair to suggest that the object of the existence of the Pergamon Press is to make money. It may well be that they will not charge a very high price for the new journal, but their calculation must be that if the journal is established, it will lead to authors submitting books for publication for which they will make a charge great enough to give them a substantial profit. Other publishers are probably publishing the other new journals from similar motives. Now it does not seem to me to be right for the development of scientific research to be seriously modified in a centrifugal direction by the profit-motive of publishers. This is a form of capitalistic endeavor

to which I am opposed, capitalist though I am otherwise. It is I think wrong for a small group of people who find a publishing firm willing to take the risk, to take on their shoulders the responsibility of starting a new journal just whenever they think it would suit them to do so. There ought to be some kind of control, or some kind of advisory body such as the International Union of Physiological Sciences, with whom a proposal to start a new journal should first be discussed. I am complaining at the moment about the appearance of four new journals, but there is no reason why the new growth should stop there. Publishers are waking up to the situation that when they launch a new journal they are very unlikely to lose because of the number of libraries which will take it. It seems to me important to take steps to have this growth controlled.

Journals constitute a matter for anxiety on other grounds. For they have to be edited. Hitherto I do not think we have solved the question of editing and refereeing in any country. Every new journal means a task for some research worker who will have to leave his research work and become the principal editor. Of course there are a few exceptional people who succeed in maintaining their research work with little diminution although they are principal editors of a journal. But these are few and far between.

For most people this does not appear to be possible, and for these the assumption of editorial duties means a serious interruption of research. Is there a way out? Three years ago I attended a meeting of the International Union of Biological Sciences in Rome, at which there was discussion on the subject of how to spend the money which would come to them from UNESCO via ICSU. One speaker, Dr. Pantin of Cambridge,

made a proposal which I thought should not be forgotten. He dwelt on the difficulty of getting satisfactory editing of journals and on its great importance. He suggested that each journal should have a full-time salaried editor whose status should be equal to that of the chairman of a department. He thought that if the position was made sufficiently attractive and honorable, it would be possible to have really first-rate men as editors-in-chief.

It is time that these remarks were brought to a close, but before they are, I would like to emphasize the great development of Pharmacology which has occurred in my time. When I entered Dale's laboratory in 1914 there were only two chairs in Britain, one in Edinburgh and one in London. Now there are eight in London alone. There is no reason I think for taking a gloomy view of the future.

At the fall meeting at Ann Arbor, the annual dinner was addressed by Dr. Carl Schmidt of the University of Pennsylvania on medical education in Latin America, from a survey of which he had just returned. Dr. Louis Goodman, of the University of Utah, and President-Elect, introduced a resolution commending the Past-President, Dr. Otto Krayer of Harvard, for his leadership in promoting the activities of our Society and in developing national headquarters at Beaumont House, Washington, D. C., in conjunction with the Physiological Society. The resolution was unanimously adopted with acclaim.

SOCIETY AFFAIRS

Past-President Otto Krayer has well developed the program of Corporation Associates, as authorized at the Ann Arbor meeting. A fair response has been made, and enough income has been obtained to aid greatly in promoting the publication effort with a full-time Secretary of Publications and her secretary at Beaumont House. It is hoped that more favorable response will bring enough income to help support the big educational activity and to help in providing an Executive Secretary for the Society. As confidence grows in the leadership of the Society, more support may follow.

Dr. Allan D. Bass, Chairman of the Educational Affairs Committee, reports wide interest in the career pamphlet distributed to colleges during the autumn. Funds are needed for satisfactory follow-up. Some twenty laboratories have been approved for graduate training support by funds from the National Institutes of Health.

Dr. Solomon Garb suggests an ad hoc committee survey of the curriculum status of pharmacology & toxicology in the various health profession schools, with the idea of suggesting appropriate standards for such courses, so that universities might know what is expected of them in regard to teaching & research in pharmacology in their health profession schools.

During the year the President of the Society sent some eight letters to members discussing various current problems before the Society. His suggestion for making visits to various laboratories was received with the usual indifference shown to Society affairs, except by a few of the dedicated. Such visits have been very stimulating & helpful for the Physiological Society. Maybe that's enough.

THE SCIENTIFIC AND PROFESSIONAL STATUS OF PHARMACOLOGY

There is an implicit challenge in the provocative address which Professor J. H. Burn so kindly prepared for the Ann Arbor meeting: What agreement can be reached regarding the scientific and professional status of pharmacology? A scientific discipline becomes established as its particular problems become formulated, especially as these problems become differentiated from those characterizing other and often related scientific fields.

Pharmacology is one aspect of functional biology, and it rose historically from the broad concepts of physiology, as did biochemistry and biophysics. Indeed, pathology may be thought to be concerned with disturbances in functional biology, and genetics and embryology may also be thought to be part of the overall scientific field of physiology.

In considering the present scientific state of pharmacology it might be wise to look at its historical development. In one sense it has been with us since antiquity, in connection with the empirical use of plant, animal and mineral materials for managing disease. Early was this lore codified, as in the great Ebers Medical Papyrus from the Egypt of 1550 B.C. However, this was chiefly a cook-book formulary, with little indication of rational organization. A great advance was made by Dioscorides, the surgeon in Nero's armies, when he attempted to classify the crude drugs of his time, and to give what was known about each, including source, identification, action, use and dosage. This prepared the way for standards, as developed in the pharmacopeias of the 16th Century.

When physicians had uniform drug preparations from pharmacists they could expect better uniformity of response in their patients to the use of these drugs. This feature was greatly extended by the isolation of pure crystalline "active principles" from crude drugs, as done first by F. W. Sertürner (1783-1841) when he obtained what he called "morphine" from opium. It was Francois Magendie (1783-1855) the great and handsome Parisian teacher who realized the significance of this for medicine when he issued his Formulaire in 1821.

Magendie was a great teacher. The French contributions to the development of pharmacology have curiously been overshadowed by the German. It is usually said that Rudolf Buchheim (1820-1879) was the first modern pharmacologist with his laboratory in the basement of his home. His pupil was Oswald Schmiedeberg (1838-1921) who developed a busy teaching institute for the fast growing new science of pharmacology at Strassburg. Here came the eager young men from the United States, and it was from Schmiedeberg that they got the slant toward the German precisionistic effort to the neglect of the French determinism.

It is the basic concepts that seem to determine the direction of development of a science. These set the pattern even for the techniques which Professor Burn emphasized. The broad scientific field of functional biology got its basic orientation in the manifesto of about 1848, when such manifestoes were popular in the revolt against traditional approaches, issued by three young and vigorous Germans, Emil duBois-Reymond (1818-1896), Carl F. W. Ludwig (1816-1895) and Hermann von Helmholtz (1821-1894). They said, as an article of faith, that all living processes are explainable in terms of physics and chemistry.

Since drugs were now chemicals, the way was open for the direct study of the action of chemicals on living material. In addition, there were pressing practical matters: the wide use of quinine had taken away the crude source of supply in the cinchona forest of Peru, and a frantic search began for substitutes. It was the early attempts to define the chemical structure of quinine that led to the development of the synthetic antipyretics, and the association of drugs, dyes and explosives made sense to the German entrepreneurs.

Gradually then it became possible to define the new scientific field as the study of the action of chemical agents on living material, whether that action is beneficial or not to the living material, and whether the living material is plant or animal. Pharmacology thus embraces toxicology, a matter inherent in the problem since antiquity. The science of pharmacology grew by (1) empirical observation (from ancient times); (2) analytical experimentation (19th Century); (3) predictive screening (20th Century), and now it is coming (4) into theoretical trials at conceptualization.

Professor Burn seems to take the practical British view that pharmacology is what is done by pharmacologists, and he emphasizes the method of isolated organ perfusion for micro-assay of biologically active chemicals. However, the scope of modern pharmacology seems to be much broader than this, if only on the testimony of the many new journal publications which he deplores. These new journals are simply signs of the very rapid advance of an increasingly important scientific discipline. It is wise to take stock of what this discipline is trying to do. What is the scope of pharmacology?

A scientific discipline is differentiated from other sciences, not so much by the peculiar techniques which it may use, but rather by the specific intellectual problems which it tries to solve, and which no other science is very much concerned about. The specific rational problems which define the scope of pharmacology as a science are chemico-biological, and rose in an historical manner:

1) Dose-effect and time-concentration relations, implicit from antiquity, but first quantitated, and thus made scientific, in 1927, by J. W. Trevan (1887-1955), the mathematician associated with Burroughs-Wellcome, with the introduction of statistical methods for the estimation of biological variations in toxicity determinations, and then extended more generally by A. J. Clark (1885-1941) at Edinburgh.

2) Localization of the biological site of action of chemicals, as begun by the broad studies of Francois Magendie (1783-1855) in Paris, to whom came young men to work.

3) Mechanisms of absorption, distribution, fate, metabolism, and excretion of chemicals in contact with living material, also begun by Magendie, and extended by Oswald Schmiedeberg (1838-1921) in Strassburg.

4) Mechanisms of action of chemicals on living material, again begun by Magendie, but developed by his great pupil, Claude Bernard (1813-1878).

5) Relations between chemical structure and biological action, begun by Magendie's pupil James Blake (1815-1893) for inorganic compounds, and extended for organic compounds by Sir Thomas R. Fraser (1841-1919) of Edinburgh.

These then are the problem concepts which differentiate pharmacology from other sciences, and which pharmacologists, as scientists, are trying to solve.

In tackling these problems are there special and unique techniques, peculiar to the science of pharmacology? It is doubtful that there are. As in any other scientific discipline, pharmacologists are privileged to use any technical procedure that may be appropriate in obtaining the answers they seek to the problems before them.

There is, however, an aspect of conceptual approach to pharmacology as a science that is pertinent to consider. This is, at what level of biological organization are these problems of pharmacology to be approached? Traditionally it seems that pharmacologists are interested chiefly in mammalian organology. This, however, is a small segment of biological organization.

It was Rudolf Virchow (1821-1902) who emphasized the importance of considering the level of biological organization at which biological scientists may work. When he started his famed Archives in 1847, he indicated that the scope of pathology ranges from cells to societies, that disease processes may involve different aspects depending on whether one approaches them from the standpoint of cells, or of organs and systems, or of organisms, or of societies. He firmly established cellular pathology, but we have not yet come to consider diseases of societies in any worthy systematic scientific manner.

Biological organization is important in pharmacology as well. Traditionally concerned chiefly with mammalian pharmacology, as a result of medical school support, pharmacologists have only recently come to consider pharmacological action at cellular levels, but the findings have been very impressive. Not yet have we tried to investigate drug action at social levels, but we do know that aggregation increases the intensity of action and the toxicity of such a drug as amphetamine.

The many uses to which pharmacological knowledge may be applied is a matter for good judgment, which implies aesthetic considerations, involving the choice of a chemical or drug best suited for the purpose desired. It is assumed that the purpose sought has been ethically considered, and is morally justified!

Pharmacological knowledge may be, and is being applied in (1) the health professions, medicine, dentistry, pharmacy, nursing, veterinary medicine, public health, and medical technology; (2) agriculture, forestry and horticulture; (3) pest control and chemical warfare; (4) industrial hygiene; (5) law and criminology; and (6) sociology. All applications of pharmacology in any of these ways may involve physicians as a result of the possible public health factors concerned.

In the health professions, pharmacological knowledge is applied to (1) diagnosis of disease; (2) prevention of disease; (3) "cure" of disease; (4) relief of disease symptoms, and (5) promotion of optimum health. These applications give a rational classification for drugs used in medicine.

With such a wide range of interest in the scientific knowledge derived from pharmacological study, it would seem wise for pharmacologists to maintain broad intellectual interests, and to keep alert to the uses being made of the knowledge they offer on the action of chemicals on living things. Traditionally pharmacology keeps bound to medicine. Isn't it time to loosen these bonds, and get in touch with pharmacological interests in other professions also? Good interprofessional relations are quite as conducive to good social morale and to intellectual and emotional stability as are good relations between scientists in the same or in different disciplines.

Is it possible that some arrangements can be made for publishing the fine symposia which feature the Fall Meetings? At Ann Arbor, Dr. Bernard B. Brodie arranged an excellent survey of "Physicochemical Factors in Drug Disposition." Fortunately the speakers had mimeographed outlines for distribution. But how about arranging to have the material brought together, edited, and published? Perhaps as funds become available this can be done for future symposia.

The annual meetings of the American Association for the Advancement of Science feature a number of symposia of interest to pharmacologists. These are usually published as symposia volumes. The details of arranging publication are not too much but that we might profit from this experience.

With the rapid advance of pharmacology we simply need as many ways of communication as possible. We have a job to keep up with ourselves, to keep in contact with scientists in other fields, and we have an increasing obligation to try to tell the people what we are doing. This relation of science to the public is a major function in AAAS, and the machinery developed may be used by all kinds of scientific groups. This might be more effective than to have separate public relations efforts for each major scientific discipline.

Beaumont House functions well for the Federation of American Societies for Experimental Biology, the Physiological Society, and ourselves. The arrangements are excellent for editorial work, for committee meetings, and for public relations.

New journals, and new ways of communication, are with us in pharmacology whether we like it or not. It is to be regretted that it did not seem possible to extend existing journals to include the wide variety of new kinds of publications in pharmacology and toxicology. Those who were unable to get their contributions published in the usual channels had to seek new or other journals. Editorial boards tend to become rigid, patterns get fixed, a sort of technical dogma becomes set, and what is not in the acceptable pattern has to go elsewhere.

With the explosive flood of new work in pharmacology seeking publication and distribution, it might be pertinent to suggest new ways that have promise. The major drug manufacturing companies have large and busy pharmacology laboratories. These concerns are interested in pushing new and supposedly better drugs. Why not put all the information on such new drugs, whether scientific, experimental, or clinical, together in a carefully edited book, and distribute it without charge to the libraries of medical institutions any where in the world that can be reached? This would save a lot of time and effort in regard to separate publications in many different journals, and it certainly would be easier on the consumers. Besides, the big drug concerns have the money to do it, and they might better spend their surplus this way than by silly and jazzed-up Madison Ave. slick advertising, which is quite disgusting to decent scientists and physicians as well.

The 1959 Fall issue of The Pharmacologist will contain the abstracts for the Miami meeting, August 31 to September 3. Begin to get your material together now.

In order to broaden our horizons, we might profitably co-operate with AAAS in some of its efforts. We are affiliated, and there are many pharmacological sessions included in its annual meetings. We now have a direct invitation. One of the resolutions adopted at the annual meeting in Washington last December reads: The Council of the American Association for the Advancement of Science urges its affiliated societies, the Board of Directors, and appropriate committees to participate fully in appropriate international programs, for example, in such areas as the health sciences, outer space exploration, population problems, and social consequences of science. Another reads: The Council of the American Association for the Advancement of Science notes with gratification that changes in U. S. passport regulations have improved international communication in science. It is hoped that the issuance of visas and credentials may be further facilitated so as to permit the unimpeded travel of scientists throughout the world.

George F. Smith, of the Board of Directors of Johnson & Johnson of New Brunswick, N. J., and Trustee of the National Fund for Medical Education, is now President of the Pharmaceutical Manufacturers Association, with headquarters in the Albee Building, Washington 5, D. C., and asks for views on the support of research in the health sciences. Under date of January 30, he writes, "As you know, the Board of Directors of this Association last November recommended the establishment of a 'National Council for the Advancement of Medical Research and Education' to continue, on a permanent basis, the work of the Consultants Committee on Medical Research and Education to the Secretary of Health, Education, and Welfare, headed by Dr. Stanhope Bayne-Jones. . . . A few weeks ago, the P.M.A.

Board took further action as a consequence of the Consultants' report by adopting the attached Statement of Principle. This statement affirms the belief that the Government must give highest priority to the support of basic research and to policies which would increase the nation's pool of research personnel in the health sciences. In thus affirming the Consultants' report, the ethical pharmaceutical industry recognizes that its ability to make a continuing contribution to the nation's health depends in large measure upon our academic research centers. The industry spent $170,000,000 for research in 1958 and contemplates research expenditures of $190,000,000 in 1959. However, the future of such efforts is intimately linked to the basic research and training carried on by the nation's academic institutions. We would particularly welcome your views on the points made in this Statement of Principle."

Here is a clear invitation to enter the discussion. Perhaps it would be wise for our Society to arrange some sort of a meeting with the Pharmaceutical Manufacturers Association to consider matters of mutual interest.

The Statement of Principle follows:

"The Board of Directors of the Pharmaceutical Manufacturers Association believe that it is constructive at this time to state their views as to the support of medical research and education by the Federal Government. At their meeting in New York City, January 8, 1959, they therefore approved the following statement.

"In 1940, according to the Report of the Committee of Consultants to the Secretary of Health, Education, and Welfare, commonly known

as the Bayne-Jones Report, the Federal Government contributed $3 million to medical research. In 1958 federal expenditures for medical research reached $227 million. (Data relating to the National Insitutes of Health, September, 1958.)

"The pressures upon the Congress and upon Federal agencies for practical results are apparent and unquestionably will increase in direct relation to the size of the expenditures. But as the Bayne-Jones Report states, 'pressures for practical results cannot be allowed to supersede the kind of fundamental studies, which, over the long run, produce revolutions rather than merely improvements in health standards.' In his communication of last July to President Eisenhower, Dr. Alan T. Waterman, Director of the National Science Foundation, makes a similar statement: 'As history amply records, the most epoch-making scientific discoveries have come from basic research.'

"Some noteworthy basic research is being carried out in the laboratories of the pharmaceutical industry, but the major centers for this basic effort are non-profit institutions, universities, medical schools and research institutions. The research and development of our industry largely rests on this foundation. On the other hand, the pharmaceutical industry, with its $127 million expenditure in 1957, and at least $170 million in 1958, already does outstanding applied research and development leading to clinically useful products. After every advance in the laboratory and clinic, it has been the pharmaceutical industry which, with its own funds, has created the modern medicines which have benefited so many . . . .

"In view of the current trend towards government-industry 'crash programs' in electronics, aircraft and other fields of research, it may seem surprising for the pharmaceutical

industry to urge that funds for medical research go mainly to academic institutions For the reasons stated above, however, this Board believes that in the allocation of Federal funds for medical research - which as the Bayne-Jones Report states is inherently inseparable from medical education and training, -- the following principles should be adopted.

"1. Since our further progress in medicine directly depends upon the supply of highly-qualified scientists, the training of additional teachers and research personnel should have highest priority.

"2. Government funds should be principally allocated to basic research objectives, to expand our fundamental knowledge in all medical fields, rather than to applied research and development.

"3. Except in unusual circumstances, government funds should therefore be allocated to non-profit institutions, such as medical schools, hospitals, and research institutions, rather than to private industry. Private industry should be subsidized only in cases where no non-profit organization can do the job. In such exceptional cases, however, full cooperation can be expected from a pharmaceutical firm approached by the Federal Government because of its unique qualifications."

This clear statement would seem to deserve the full appreciation of our Society for the concern of the drug industry for the welfare of the basic research programs of academic groups.

BEAUMONT HOUSE

The pictures on the back cover of The Pharmacologist give some idea of what Beaumont House is like, physically. It is a beautiful building, well arranged for the service functions of the Federation of American Societies for Experimental Biology. Here are the general offices for the American Physiological Society, and here also are the two very well furnished offices for the editorial activities of the American Society for Pharmacology and Experimental Therapeutics. Some day we may have enough money to have a full-time executive secretary to take charge of our Society's rapidly growing activities. We need one.

Beaumont House is located on a pleasant wooded knoll, north of the National Institutes of Health, at 9650 Wisconsin Ave., Washington 14, D. C. It is near the Naval Hospital, and convenient to the major health centers of the Federal Government. It is 10 miles from downtown Washington, but is readily reached by bus or taxi.

The acquisition of Beaumont House for the Federation was greatly aided by the enthusiastic and wise efforts of Dr. K. K. Chen, Director of Pharmacological Research at the Lilly Research Laboratories, Indianapolis, who was President of our Society in 1952.

Front of main portion of house

Rear of house from the garden